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EXAMINER

NGUYEN, DUNG X

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/885,811 | <b>Applicant(s)</b><br>BOOTH ET AL. |  |
|                              | <b>Examiner</b><br>Dung X. Nguyen    | <b>Art Unit</b><br>2631             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 is/are allowed.
- 6) ☒ Claim(s) 3, 5 - 7 is/are rejected.
- 7) ☒ Claim(s) 1 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- 1. ☐ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

1. Applicant's arguments filed on June 10, 2005 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

***Claim Objections***

2. **Claim 1 is objected** to because of the following informalities: the statement of "one of" as recited in line 7 should be deleted. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

4. **Claim 3 is rejected** under 35 U.S.C. 102(e) as being anticipated by Huttunen (US patent application publication # 2002/0016154 A1).

**Regarding claim 3**, Huttunen discloses (figure 1 and page 2):

- A data modulator (7) responsive to the data signal for producing modulated signal components including a magnitude component and a periodic signal containing a phase component;

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- An amplifier (8) responsive to the magnitude component and the periodic signal for producing a desired communication signal;
- Feedback circuitry (9, 12, 13, 14, 15, 16B, 17, 20, 4, 5A, B, 6A,B, 7, 8) responsive to the communication signal and to the periodic signal for producing feedback signal components (9, 12, 13, 14, 15, 16B, 24, 25) in quadrature relation, the feedback signal (24, 25) including information about a phase difference (4) between the communication signal and the periodic signal.

Regarding claim 5, as followed by the limitations analyzed in claim 3, Huttunen further show:

- A correction table (17, 20) for correcting the magnitude component and the phase component (page 2, paragraph # 0018); and
- Adaptation means (17, 20, 4) responsive to the feedback signal components for adapting values of the correction table (17, 20) (abstract).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

6. **Claim 6 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Huttunen (US patent application publication # 2002/0016154 A1), and further in view of Eicher, Jr. et al. (US patent application publication # 6,011,813).

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**Regarding claim 6**, as followed by the limitations analyzed in claim 5, Huttunen differs from the instant claimed invention that it does not show wherein the adaptation is based on a statistical algorithm.

However, Eicher, Jr. et al. discloses wherein the adaptation means is based on a statistical algorithm (page 11, paragraph # 0137).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Huttunen and Eicher, Jr. et al. as providing the requirements of the instant claimed invention for supplying the adaptation means based on the statistical algorithm.

7. **Claim 7 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Huttunen (US patent application publication # 2002/0016154 A1), Eicher, Jr. et al. (US patent application publication # 6,011,813), and further in view of Werner et al. (US patent # 6,069,917).

**Regarding claim 7**, as followed by the limitations analyzed in claim 6, Huttunen and Eicher, Jr. et al. differ from the instant claimed invention that they do not show wherein the statistical algorithm is Least Mean Square.

However, Werner et al. discloses wherein the statistical algorithm is Least Mean Square (column 1, line 62 to column 2, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Huttunen, Eicher, Jr. et al., and Werner et al. as providing the requirements of the instant claimed invention for updating the feedback portion (column 1, lines 61 – 65 of Werner et al.).

***Allowable Subject Matter***

8. **Claim 1 would be allowable** if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

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9. **Claim 4 is objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. **Claim 2 is allowed.** The following is a statement of reasons for the indication of allowable subject matter:

**Regarding to claim 2**, the prior art of record fails to show or render obvious of a method of generating feedback information in IQ form for linearity compensation of a communications transmitter using polar modulation, comprising:

Using a polar modulator to produce a phase-modulated signal and an amplitude signal;

Combining the phase-modulated signal and the amplitude signal to produce an output signal; and

Using an IQ demodulator to produce feedback information for linearity compensation, the IQ demodulator receiving as input signals the phase-modulated signal and the output signal, and producing as output signals in-phase and quadrature components representing the phase difference between the phase-modulated signal and the output signal.

***Contact Information***


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (571) 272-3010. The examiner can normally be reached on Monday through Friday from 8:00 AM to 17:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Vanderpuye, Kenneth N. can be reached on (571) 272-3078. The fax phone numbers for this group is (571) 273-3021.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

DXN

August 9, 2005

  
KENNETH VANDERPUYE  
PRIMARY EXAMINER